December 2005 Update

Silver Bow Creek/Butte Area Superfund Site
Butte, Montana
(Review Date: 9/30/05)

Brief Site History: The boundary of the Silver Bow Creek/Butte Area site begins above Butte, near the Continental Divide, and extends westward along Silver Bow Creek to and including the Warm Springs Ponds (a treatment area). The site covers about 40 miles of stream and stream side habitat. Silver Bow Creek was used as a conduit for mining, smelting, industrial and municipal wastes for more than a hundred years. Vast mine tailings deposits are found along the creek. These deposits contain elevated levels of metals and have been dispersed over the entire flood plain. The site also includes the cities of Butte and Walkerville, as well as the Berkeley Pit and the interconnected mine workings.

Wind-blown particles, ground water, surface water and soils are contaminated with arsenic and other heavy metals, including copper, zinc, cadmium and lead. Silver Bow Creek and the Clark Fork River contain metals from the cities of Butte to Milltown. The tailings, dispersed along the creek and river, severely limit aquatic life forms and have caused fish kills in the river. Potential health threats include direct contact with or accidentally swallowing contaminated soil, surface water, ground water or inhaling contaminated air.

The Silver Bow Creek/Butte Area site was added to the National Priorities List in 1983, and is one of four contamination areas, jointly known as the Clark Fork Basin Sites. The others are Milltown Reservoir Sediments, Anaconda Company Smelter, and Montana Pole & Treating.

Cleanup Activities Completed: Since the last review, biomonitoring investigations were completed in 2003 to evaluate ecological performance of the Warm Springs Ponds, the Cook Creek sedimentation basin was cleaned and made deeper in 2002 to reduce storm water inputs, and a geotextile and soil cap was added in 2002 to portions of the west Pond 3 dike to create better habitat for vegetation and improve its appearance.

Current Status: EPA has completed several removal actions and is now focusing on a cleanup of the rest of the Butte Priority Soils OU through long-term remedial response actions.

Summary of Protectiveness: Results of the second five-year review indicate completion of only two remedies—at the Rocker and Warm Springs Ponds operational units, but with the completion of the remedies at other OUs, protection of human health and the environment as a whole will improve.

Issues Impacting Protectiveness: Seasonal exceedances of arsenic concentrations in effluent continue and tighter standards will soon go into effect. The Horsehoe Bend Water Treatment Plant did not meet the final cadmium performance criterion. There has been an increasing trend in benthic macroinvertebrate tissue metal concentrations. The following table summarizes the status of the follow-up actions addressing these issues.

Issues	Recommendations/ Follow-up Actions	Follow-up Actions (Status/Due Date)	Status of Follow-up Actions 12/05	Responsible Party
1. Continual seasonal exceedances of arsenic concentrations in effluent. Meeting arsenic standards for surface water will require an additional treatment step. WSP Active and Inactive OUs.	EPA may conduct arsenic mass loading studies (seasonal) to determine the significance of the arsenic load from the WSP as compared to other sources of arsenic loading in the basin. EPA may initiate additional wildlife studies to determine whether bioaccumulation of arsenic in birds requires mitigation.			
2. Increasing trend in benthic macroinvertebrate tissue metal concentrations. WSP Active and Inactive OUs.	Continue periodic monitoring of trends in tissue metal concentrations should be performed to determine if risks are significant to WSP fish or wildlife.			
3. Rebound of arsenic concentrations at Rocker OU below repository is greater than expected.	Atlantic Richfield will continue quarterly groundwater sampling and O&M activities so that any changes in site conditions will be detected.			
4. Same as above.	EPA to evaluate the protectiveness and continuation of the ¼ mile radius well ban.			
5. Horseshoe Bend WTP did not meet the final cadmium performance criterion.	Atlantic Richfield and Montana Resources to conduct additional performance testing			